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DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY

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March 8, 1995

Glen Eurick
Barrick Mercur Mine
P.O. Box 838
Tooele, Utah 84074

RE: Mercur Mine Tailing Impoundment Conceptual Closure Plan Acceptance - Permit No. UGW450002

Dear Mr. Eurick:

We have completed our review of Barrick's Conceptual Closure Plan for the Tailings Impoundment. The plan was submitted to our office on September 27, 1994, and prepared for Barrick by JBR Consultants Group. This plan is accepted as far as it satisfies the requirements of Part I.H.2 of the above referenced permit. This acceptance is contingent upon Barrick addressing the following review comments in the Interim Final Closure Plan (IFCP) due to be submitted on December 4, 1996. Although there are still minor areas of the plan which are not complete, the overall plan is acceptable as a Conceptual Closure Plan because the details can be filled in upon submittal of the IFCP.

1. **Post Closure Monitoring**

The IFCP should contain Barrick's proposed monitoring plan for the post operational period of the tailings impoundment. Specific monitoring frequencies and duration must be proposed. For example, continued quarterly ground water monitoring for three years following the cessation of tailings deposition, followed by semi-annual monitoring for seven years and annual monitoring for ten years thereafter. After the completion of the cap and reclamation, it is anticipated that Barrick will conduct sufficient inspections to monitor cap and reclamation integrity and to prevent exposure to the public and the environment from uncovered or eroding tailings. Some sort of frequency and duration for these inspections should also be proposed.

2. **Surface Water Hydrology**

The IFCP must contain supporting information and calculations concerning the determination of the probable maximum precipitation (PMP) and the subsequent flood routing performed on the runoff through the tailings impoundment area and into Meadow Canyon. Once the water is passed

into Meadow Canyon and flows into the rock diversion channel around Area 3, is the design capacity of this channel along side of Area 3 adequate to pass the storm water without damage to the Area 3 cap and reclamation? Was this additional discharge included in the design approval for the channel, and which agency gave this approval?

Within your report you cite that the sixteen inches of average annual precipitation and the 30 inches of potential annual evaporation as justification that there would be no permanent accumulation of water in the tailings impoundment. This approach fails to consider the impact of runoff. Because the low end of the tailings pond will be the lowest point within Reservation Canyon and because precipitation events are concentrated, we can expect significant accumulation of runoff on the low end of the tailings pond. Your yearly water balance predicament is indicative of this effect. The concentrating of the runoff from the entire Reservation Canyon Area into this area of the tailings pond would easily overwhelm the 30 inches of evaporation potential. Thus, the potential for permanent ponding cannot be ruled out based upon the above precipitation versus evaporation potential approach. Therefore, it will be important for either the final low spot in the tailings to be at least 7330 feet msl to meet the proposed spillway elevation or that the spillway is constructed to meet the actual final contour of the tailings impoundment.

By the time you submit the IFCP, Barrick should decide whether or not it wishes to use the Golden Gate Pit to intercept and collect runoff from upstream watersheds or route this water around the pit and allow it to runoff naturally down Mercur Canyon. The preferred option would be to discharge the storm water to Mercur Canyon and thus restore the ecological benefits present before the mining of the area. However, Barrick may be in a tough position if the runoff water characteristics are unsuitable for surface discharge and are also in excess of ground water standards. As mentioned in our letter of July 24, 1994, if the runoff does not meet the diminimis standard of the ground water rules for clean water discharge a ground water permit may be required. Potential Storm Water Permit issues must also be evaluated and updated as the plan progresses towards its final form. Because storm water and ground water issues may overlap, it would be worthwhile to discuss these issues from a comprehensive standpoint with the different involved water quality programs. Therefore, we suggest that Barrick initiate such discussions with our office prior to submittal of the IFCP. Because Barrick's latest submittal fails to address any of the questions posed on pages 3 and 4 of our July 24, 1994 letter, with respect to the Golden Gate Pit, such a meeting assumes even greater importance presently.

Barrick should be aware that the possible routing of water within the tailings impoundment to Meadow Canyon before the capping of the facility is complete, is probably not appropriate. The Conceptual Closure Plan was unclear as to the timing of the construction of the Reservation to Meadow Canyon discharge channel with respect to the capping. This matter must be clarified in the IFCP.

3. **Saddle Dam**

The final configuration of the Saddle Dam and the Reclaim Water Cell were not adequately addressed in the Preliminary Closure Plan. By the time you submit the IFCP you should determine the final configuration for this area. Will the contaminated soils within the reclaim cell

be removed or covered? If covered, what type of design will be applied. What will be done to prevent the accumulation of water within this cell once the pumps are removed? Because the previously high contaminant concentrations in MW-8 may have been linked to the accumulation of fluids with the Reclaim Water Cell this issue is of significant importance and must be covered in the IFCP.

4. **Cap Design**

The steps outlined in the Preliminary Closure Plan for the drying, contouring, consolidation and temporary and permanent vegetation of the tailings appear to be appropriate. Barrick stops short in outlining their plan by not proposing a specific cap configuration. Upon submittal of the IFCP Barrick must propose an appropriate and complete cap configuration for our review.

Please consider the above comments in the preparation of the IFCP. Also refer to our letter of July 24, 1994. In addition, as soon as possible, we would appreciate a written response to each of the issues addressed in the above comments. Your response is necessary so that we know whether or not you are in agreement with us on these matters and so that we can be assured that each of this issues will be addressed in the IFCP. It needs to be pointed out that by deferring the resolution of the above issues until the submittal of the IFCP, failure to successfully resolve these issues will become an obstacle to Barrick's ability to attain permit reauthorization in 1997.
If you have any questions concerning the above please contact Dennis Frederick at 801-538-6146.

Sincerely,

Utah Water Quality Board

Don A. Ostler, P.E.
Executive Secretary

DAO:DAF:wfm

cc: Utah County Health Department
Tooele County Health Department
Brain Buck, JBR Consultants Group
Wayne Hedburg, Division of Oil, Gas and Mining
Howard Hedrick, Bureau of Land Management, U.S. Dept of the Interior

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